



STS CONSULTANTS

STS Consultants, Ltd.
750 Corporate Woods Parkway
Evanston, Illinois 60061-3153

voice 847-279-2500
fax 847-279-2510
web www.stsconsultants.com

EPA Region 5 Records Ctr.



226805

November 6, 2002

Mr. Fred Micke, On-Scene Coordinator
Ms. Verneta Simon, On-Scene Coordinator
U. S. Environmental Protection Agency
Region 5
77 W. Jackson Blvd., SE-5J
Chicago, Illinois 60604

RE: Exploration for Radiological Impacts Below Groundwater, Lakeshore East, 221 N. Columbus Drive, Chicago, Illinois – STS Project No. 1-32193-XC

Dear Mr. Micke and Ms. Simon:

As you know, remediation of radiologically-impacted soil is in progress at the Lakeshore East site at 221 N. Columbus Drive, Chicago, Illinois. This work is being conducted in accordance with a Work Plan approved by USEPA on September 20, 2002.

In the course of the previously completed investigation at the site and during the current remediation, radiologically-impacted soil was found to extend below the level of groundwater. The Work Plan allows for impacted material to remain below the groundwater provided the location is documented and appropriate notice is made, the wording of which is to be resolved between the site owner and USEPA.

Following the identification of this material below the groundwater during remediation, efforts to remove the impacted material consisted of excavating to approximately 4 feet below the water table. At that point, no further excavation was practical because of unstable sideslopes. A decision was made to assess the material through a subsurface, downhole gamma survey.

The gamma survey was completed as follows. The area suspected of containing impacted soil below the water table was filled with clean soil. The fill was placed to approximately 2 feet above the level of water in the excavation. Based on survey measurements, the elevation of the water table is estimated at -0.65 feet CCD. A drill rig was mobilized to the site and hollow-stem augers were advanced to a depth of approximately 20 feet. A 3-inch diameter steel casing was placed inside the augers, and the augers were withdrawn. The resulting borehole consisted of an approximately 6-inch borehole with a 3-inch casing. Groundwater entered the annular space between the borehole wall and the casing. The inside of the casing was dry.

The gamma survey was taken in 6-inch increments using a Ludlum 2221 rate meter-scaler and a 2 x 2 inch NaI model 44-10 probe. The probe was fitted with a 1-inch lead end cap and a ¼-inch lead ring around the detector. This configuration is consistent with the configuration recently calibrated at the Kerr-McGee West Chicago calibration blocks, in cooperation with USEPA, for use with the steel casing. However, it is recognized that the configuration of the borehole is somewhat different than the calibration conditions. Specifically, the borehole is larger than the exterior of the casing, allowing an annular space. Additionally, this annular space is filled with water below a depth of 2 to 3 feet from the top of the survey. The annular space and presence of water are recognized as conditions that will reduce the gamma readings measured inside the casing. As a result, some value less than the calibrated threshold value would represent an exceedance of the cleanup criteria of 7.1 pCi/g. For the calibration conducted August 7, 2002, the exceedance reading was 5,396 counts for 30 seconds.

Four borings were advanced and four separate steel casings were installed. The attached Figure 1 shows the layout of the borings on an enlarged section of the fill isopach drawing. The borings are generally within approximately 8 to 10 feet of each other, over an area approximately 19 feet from north to south and 17 feet from east to west.

The downhole gamma readings show typically low gamma 30-second counts from 1,200 to about 2,000 in the upper 4 to 6 feet, generally, the clean fill placed in the previous excavation. The highest readings measured in each boring was between 6 to 8 feet deep: 2,910 in Boring No. 1 at 6 feet; 2,794 in Boring No. 2 at 7 feet; 4,395 in Boring No. 3 at 8 feet; and 4,036 in Boring No. 4 at 6 feet. Below these maxima, the readings return to reading in the range of 2,000 to 3,000 or lower, similar to the soil above the maximum readings. Table 1 shows the gamma values measured. Table 2 presents the boring coordinates.

The downhole survey data indicates a thin zone of material is present several feet below the groundwater table which exhibits elevated gamma radiation. While calibration values are not directly applicable, no readings were found showing an exceedance of the cleanup threshold. The highest reading is approximately 80 percent of the value indicating an exceedance.

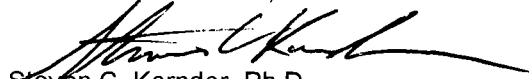
It is requested that the USEPA accept the remediation that has been completed at this location and the downhole survey results provided herein as sufficient cleanup and documentation for this exclusion zone. In making this consideration, please note that this area lies within the previously designated Slip E area. The slip areas have been specified by USEPA as continuing to be subject to soil monitoring anytime excavation occurs for foundation installation, utility installation or any other purpose. Further, this specific area is proposed to be covered by an earthen berm approximately 15 to 20 feet high. Finally, the area is beneath a proposed roadway or in the proposed park, suggesting little likelihood that construction in the proposed development will penetrate this material.

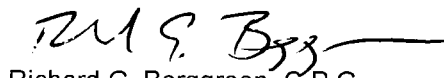
Therefore, given the existing conditions and proposed construction, no further remediation appears necessary, no deed restriction beyond that already anticipated for the slip areas is necessary and no additional exploration is required to close this location.

Please contact us with any questions you may have regarding this information.

Regards,

STS CONSULTANTS, LTD.


Steven C. Kornder, Ph.D.
Senior Geochemist


Richard G. Berggreen, C.P.G.
Principal Geologist

cc: David Carlins, Kara Hughes, Lakeshore East Development

Attachments: Boring Layout Figure 1
Table 1 – Downhole Boring Log
Table 2 – Exploration Borings in Former Slip E

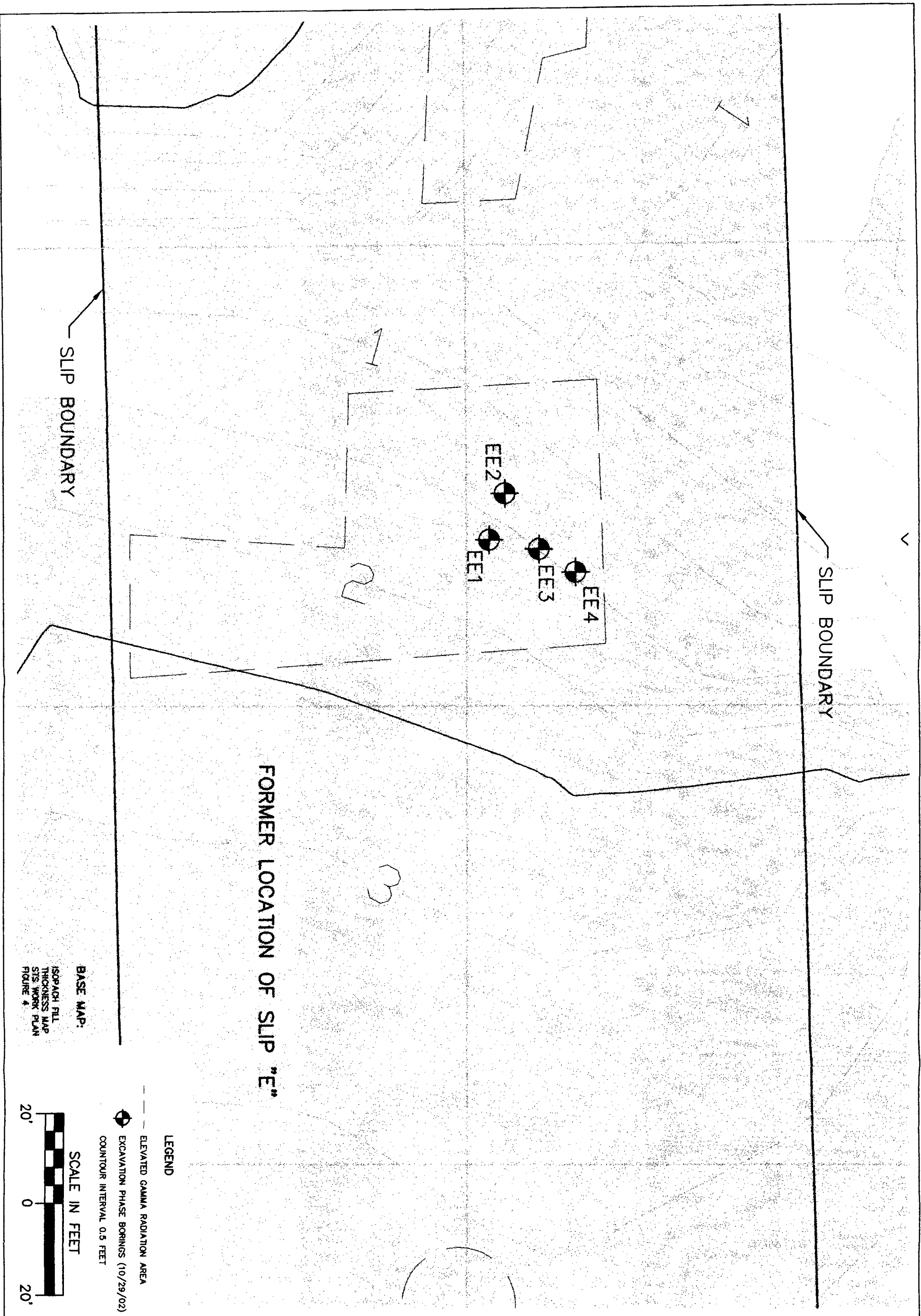
Table 1
Downhole Boring Log
Lakeshore East Site

Inst Model: Ludlum 2221	Date: 10/29/02
Serial #: 126497	Technician: Jerry Krane
Probe Model: PR 44-10	Calbr. Date: 8/7/02
Serial #: 171991	7.2pCi/g = 5396 cts/30 sec
Probe Config: Shielded 2X2 NaI w/ 1" endcap & ¼" ring around detector.	

Depth (ft)	Boring Number (counts per 30 seconds)			
	EE1	EE2	EE3	EE4
0.5	1401	1200	1376	1423
1	1432	1276	1573	1747
1.5	1477	1278	1655	1792
2	1552	1267	1911	1833
2.5	1371	1362	2009	1873
3	1359	1366	2033	1881
3.5	1170	1335	2010	1965
4	1294	1392	1886	2202
4.5	1915	1407	1640	2421
5	2519	1379	1724	2840
5.5	2693	1495	1931	3624
6	2910	1686	2013	4036
6.5	2684	2680	2445	3845
7	2534	2794	3274	3514
7.5	2428	2420	4169	3081
8	2209	2014	4395	2713
8.5	2162	2044	3423	2526
9	2106	2047	2592	2547
9.5	2273	2163	2393	2664
10	2161	2108	2429	2908
10.5	2235	2229	2614	2744
11	2125	2234	2257	2743
11.5	2312	2285	2115	2515
12	2319	2278	2364	2353
12.5	2126	2544	2420	2224
13	2179	2495	2324	1946
13.5	2423	2479	2639	1864
14	2669	2335	2627	1966
14.5	2871	2268	2205	2076
15	2801	2283	2132	2165
15.5	2790	2165	2049	2085
16	2688	2081	2137	1992
16.5	3441	1939	2156	1999
17	2579	2019	2297	2087
17.5	2658	2407	2598	2143
18	2403	2576	2483	1865
18.5	2182	2292	2357	1749
19	1924	1807	1957	1731
19.5		1667	1970	1594
20				1320

Table 2
Exploration Borings in Former Slip E - 10/29/02
Lakeshore East Site

Location	Coordinates	
	Northing (ft)	Easting (ft)
EE1	18805	21664
EE2	18808.5	21654
EE3	18816	21666
EE4	18824	21671

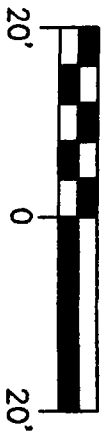


SLIP BOUNDARY

SLIP BOUNDARY

FORMER LOCATION OF SLIP "E"

BASE MAP:
ISOPACH FILL
THICKNESS MAP
SIS WORK PLAN
FIGURE 4



SCALE IN FEET

COUNTOUR INTERVAL 0.5 FEET



EXCAVATION PHASE BORINGS (10/29/02)


ELEVATED GAMMA RADIATION AREA

LEGEND

LOCATION OF CASINGS FOR GAMMA SURVEY
LAKESHORE EAST
221 N. COLUMBUS DRIVE
CHICAGO, ILLINOIS

DESIGNED BY	SCK	DATE	11/05/02
DRAWN BY	PVP	DATE	11/05/02
APPROVED BY	RGB	DATE	11/05/02
CADFILE	X:\PROJECTS\132183\1.dwg		
XDWF	00-132183-1.dwg		
LMAY	11/05/2002 14:14		

REVISION NO.	DESCRIPTION	DATE	BY



SIS CONSULTANTS, LLC
2000 South Dearborn Street
Chicago, Illinois 60605-3400
312.746.0000

SIS PROJECT NUMBER
30183-NC

SIS PROJECT FILE
00-132183-1.dwg

SCALE
1"=20'

FIGURE NO.
1